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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference TS 6387 PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/EP 03/10004	International filing date (day/month/year) 05.09.2003	Priority date (day/month/year) 06.09.2002
International Patent Classification (IPC) or both national classification and IPC E21B43/08		
Applicant SHELL INTERN. RESEARCH MAATSCHAPPIJ B.V. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 02.04.2004.	Date of completion of this report 08.09.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Ott, S Telephone No. +49 89 2399-7429



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP 03/10004

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-6 as originally filed

Claims, Numbers

1-13 received on 24.08.2004 with letter of 24.08.2004

Drawings, Sheets

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

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International application No. **PCT/EP 03/10004**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-13
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-13
Industrial applicability (IA)	Yes: Claims	1-13
	No: Claims	

2. Citations and explanations

see separate sheet

POINT V

V-1. D1:US-20020020527 discloses a wellbore device comprising a fluid passage (10) for transferring fluid between an earth formation (1) and a surface facility (2), and a body of swellable material (8) which swells upon contact of the body with a selected fluid (page 6, par.63), said body of swellable material being formed as a sleeve, wherein the fluid passage passes through the wall of the sleeve so that the fluid passage substantially closes upon swelling of the body due to contact of the body with the selected fluid, the wellbore device further including a filter layer (6) for preventing flow of solid particles from the earth formation to the surface facility so as to form a sandscreen, wherein the filter layer extends around the sleeve of swellable material. The subject-matter of claim 1 differs from the disclosure of D1 in that the sleeve of swellable material extends around the filter layer. The objective problem solved by this difference is to avoid detachment of the sleeve from the filter layer upon closure of the filter passage and exertion of pressure from outside on the sleeve. The solution of extending the sleeve around the filter layer and thereby biasing the sleeve against the filter layer upon closure of the fluid passage does nevertheless not involve an inventive step : D1 discloses an inner tubular screen (7) which, though not assuming the function of a filter (page 5, par. 60, l.5, 6), nevertheless ensures the function of an obstacle against detachment of the sleeve from the filter layer. The subject-matter of claim 1 is therefore merely an alternative solution to the construction disclosed in D1. The skilled man could choose between exposing either of the sleeve (32) or the filter layer (30) on the outside of the device and putting the remaining of the sleeve or filter layer between the base pipe (26) and the outside of the device (potential damage to the outside of the device during introduction in the wellbore would have equivalent consequences in both cases, whether the sleeve is around the filter layer and thereby serves as a protecting surface for the filter layer or whether the filter layer is around the sleeve and thereby serves as a protecting surface to the sleeve). The subject-matter of claim 1 does therefore not meet the requirements of inventive step in the sense of Art. 33(3) PCT.

V-2. The subject-matter of claims 2-12 does not either meet the requirements of inventive step in the sense of Art. 33(3) PCT, with regard to D1.

V-3. The subject-matter of claim 17 does not meet the requirements of Rule 6.2a PCT.

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International application No. PCT/EP03/10004

V-4. Following defects are pointed out:

- Rule 6.2 b) PCT in combination with PCT GL 3 III-4.11: no reference numbers.
- Rule 5.1a)iii) PCT: description not in conformity with claims.

C L A I M S

1. A wellbore device comprising a fluid passage for transferring fluid between an earth formation and a surface facility, and a body transferable from a first mode to a second mode upon contact of the body with a selected fluid, said body being arranged so as to substantially close the fluid passage upon transfer of the body from the first mode to the second mode due to contact of the body with the selected fluid.

2. The wellbore device of claim 1, wherein the wellbore device is adapted to be arranged in a wellbore formed in the earth formation.

3. The wellbore device of claim 1 or 2, wherein said body has a larger volume in the second mode than in the first mode.

4. The wellbore device of any one of claims 1-3, wherein said body comprises a body of swelleable material which swells upon contact of the body with the selected fluid, said body of swelleable material being arranged so as to substantially close the fluid passage upon swelling of said body due to contact of the body with the selected fluid.

5. The wellbore device of claim 4, wherein the fluid passage is formed in the body of swelleable material.

6. The wellbore device of claim 5, comprising a first said fluid passage formed in a first part of said body and a second said fluid passage formed in a second part of said body, wherein the first fluid passage is closed due to contact of the first body part with the selected fluid, and wherein the second fluid passage is open.

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7. The wellbore device of claim 6, wherein the first body part comprises a plurality of said first fluid passages, and the second body part comprises a plurality of said second fluid passages.

5 8. The wellbore device of any one of claims 4-7, wherein said body of swelleable material is formed as a tube, and wherein the, or each, fluid passage passes through the wall of the tube.

10 9. The wellbore device of claim 8, further including a perforated tubular conduit, and wherein the body of swelleable material is formed as a sleeve extending around the perforated tubular conduit.

15 10. The wellbore device of claim 9, wherein the perforated tubular conduit is provided with a filter layer for preventing flow of solid particles from the earth formation to the surface facility so as to form a sandscreen.

20 11. The wellbore device of claim 10, wherein the filter layer is arranged between the perforated tubular conduit and the sleeve of swelleable material.

12. The wellbore device of any one of claims 9-11, wherein the sleeve is one of the group of a permeable sleeve, a perforated sleeve, and a sleeve having an open weave structure.

25 13. The wellbore device of any one of claims 9-12, wherein the perforated tubular conduit is radially expandable.

30 14. The wellbore device of claim 13, wherein the wellbore device is arranged in the wellbore and wherein the sandscreen has been radially expanded so that the sleeve is substantially in contact with the wellbore wall.

15. The wellbore device of any one of claims 1-14, wherein the selected fluid is earth formation water.

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ART 34 AMDT

16. The wellbore device of any one of claims 1-15,
wherein said body comprises a water swelleable material
selected from the group of starch -polyacrylate acid
graft copolymer, polyvinyl alcohol cyclic acid anhydride
5 graft copolymer, isobutylene maleic anhydride, acrylic
acid type polymers, vinylacetate-acrylate copolymer,
polyethylene oxide polymers, carboxymethyl cellulose type
polymers, starch-polyacrylonitrile graft copolymers and
the like, highly swelling clay minerals, Sodium
10 Bentonite, and Sodium Bentonite having as main ingredient
montmorillonite.

17. The wellbore device substantially as described
hereinbefore with reference to the drawings.

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ART 34 AMDT